



### **INTRODUCTION**

quity has a long-standing place in American education. The Elementary and Secondary Education

Act was designed to give the federal government authority to equalize the educational opportunities of all children through federal programs such as Title I. In the Merriam-Webster dictionary, equity is defined as justice according to natural law or right specifically: freedom from bias or favoritism or something that is equitable. Equality is defined as the quality or state of being equal: sameness or equivalence in number, quantity, or measure. Considering each of these definitions in light of federal legislation, the intent of equity may be present in school districts across the country, but the execution could be lacking. With the entire world experiencing a pandemic,

the focus of equity has expanded to the digital world. We've learned through these past several years that technology can be an accelerant and adjunct to great teaching because it can provide resources that amplify educators' ability to reach students.

## INCLUSIVE BY DESIGN: ALL ABOUT ACCESSIBILITY AND EQUITY IN SCHOOLS

Accessibility and equity are priorities for many school districts in their mission and vision, but how districts provide these may vary widely. In today's world, accessibility is top of mind. Federal laws such as the Americans with Disabilities Act and the Individuals with Disabilities Education Act specifically calls for students to have plans to accommodate their individual disabilities or instructional

needs and this applies to technology access as much as it applies to physical access. Schools need to consider whether students have access to laptops connected to the internet at home, whether they have access to a digital curriculum and whether the technology provides support for their instructional needs. Students with 504 plans or individual education programs should have equitable resources compared with their peers. Providing these resources in a way that doesn't stigmatize or call out the student's disability is a tremendous bonus when considering the student's social and emotional well-being. Incorporating the right resources so that all students within the learning environment benefit without causing any student to stand out from another is the essence of inclusive classroom design.

## INCLUSIVE CLASSROOM DESIGN: ONLINE, ANYTIME

According to the Center for Teaching and Learning at Columbia University, there are <u>five principles</u> for teaching online:

- 1. Establish and support a class climate that fosters belonging for all students.
- 2. Set explicit student expectations.
- 3. Select course content that recognizes diversity and acknowledges barriers to inclusion.
- 4. Design all course elements for accessibility.
- 5. Reflect on one's beliefs about teaching (online) to maximize self-awareness and commitment to inclusion.

To implement each of these principles, schools must have a robust digital delivery infrastructure that supports personalization and individualization. Tracey Rowley, an education technology integration specialist in the Tucson Unified School District in Arizona, believes building equitable, inclusive and accessible classroom and school cultures starts with making sure leaders, staff and educators have a clear understanding of the practices needed to observe and implement. These may include adjusting testing experiences for learners, providing extended opportunities to practice skills, understanding each student's background and individual needs, and differentiating to support all learners. Rowley notes that celebrating success and modeling best practices allow leaders to continue to educate and reinforce these principles in their district. Rowley specifically notes that support and training on accessible technologies inspire confidence and independence for learners and encourage districts to innovate and pivot based on the needs of the schools, students and teachers. To provide accessibility and inclusivity simply and quickly, Rowley uses the Microsoft

platform with built-in tools like Immersive Reader and Presentation Coach. Tucson also adopts new apps and tools such as Translator, PowerPoint Live, Flipgrid and Reading Progress.

Another Arizona district, Phoenix Union High School District, embraces technology needed for accessibility with a lesson design that starts with an inclusive mindset. The district offers training on Universal Design for Learning along with Triple E Framework focused on technology integration. The ongoing learning and training are provided through district-created courses on effective technology integration practices, enabling on-demand content for teachers, whenever and wherever they need it. Technology integration educator Aric Bilas notes the district uses the Microsoft platform within its UDL lesson design. (see fig.1)

Inclusive practices aren't relegated to face-to-face instruction; we must also attend to inclusivity when designing online. The principles shared by Columbia University and incorporation of a UDL model when developing online content/lessons will ensure the prioritization of inclusive practices in both face-to-face and digital environments, an example for all districts to follow.

### ACCESSIBILITY NEEDS IN TODAY'S CLASSROOMS

The Individuals with Disabilities Education Act, or IDEA, was enacted in 1975 to mandate free and public education for eligible students ages 3 to 21. A team of professionals meets to determine a student's eligibility based on whether

### **HOW DO TEACHERS DIFFERENTIATE?**

Lesson design with tools that allow for differentiation and accommodations aligned to UDL

### **ENGAGEMENT**

- Flipgrid, Teams for flexibility with communication
- Microsoft Stream & YouTube
- Newsela for relevancy
- Co-author documents in Office 365

### REPRESENTATION

- Office Lens
- Immersive Reader
- Microsoft Sway
- Live captions in PowerPoint

### **ACTION AND EXPRESSION**

- Presenter Coach in PowerPoint
- Dictate and Voice Recording
- Video Editor and Paint built into Windows 10

FIG.1



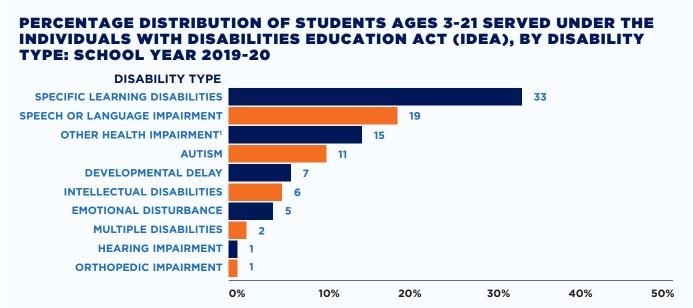


the disability affects overall academic performance. Eligible students are provided with a plan that is followed for the school year and revised annually. The National Center for Education Statistics notes that 7.3 million students nationwide are eligible for these services, making up 14% of the national public school enrollment (see graph below).

These students face many barriers to education, but the start of the pandemic presented even greater barriers through the shift to online learning. Access to tools enabling the online environment to be accessible is a high priority for districts, especially tools that attend to some of the more common disabilities. Thirty-three percent of students have a specific learning disability that can cause them to have trouble learning and/or using certain skills. This disability is a neurological disorder affecting the student's ability to "receive, process, store, and respond to information."

In addition to students who qualify for an IEP under IDEA, there are students who may have physical or mental disabilities and may require a 504 plan that requires accommodations.

The IEP is required under IDEA and stipulates that students qualify based on 13 disability categories, but the 504 is part of the Rehabilitation Act and students qualify based on a record of impairment. The IEP describes accommodations and modifications, whereas the 504 describes services that alter the learning environment. The



<sup>1</sup>Other health impairments include having limited strength, vitality, or alertness due to chronic or acute health problems such as heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell, haemophilia, epilepsy, lead poisoning, leukemia, or diabetes.

Note: Data are for the 50 states and the District of Columbia only. Visual impairment, traumatic brain injury, and deafblindness are not shown because they each account for less than 0.5 percent of students served under IDEA. Due to categories not shown, detail does not sum to 100 percent. Although rounded numbers are displayed, the figures are based on unrounded data.

FIG.2

state – and therefore the school district – receives funding to certify and serve students with an IEP and there is an outlined procedure to manage conflict resolution when identifying eligibility. There is no formal plan for a 504 and there is also no funding per student to serve or identify eligibility. The 504 plan is parent-paid in most instances where a fee is incurred. Assistive technologies may be used for either plan.

Accommodations for learning often include assistive technologies. <u>Assistive technologies</u> can read the text, enlarge the print, highlight the text, and allow other functions that enable the student to better understand the learning material. Using assistive technology can be very beneficial, but it can also be something that calls attention to the student and their disability. Considering the awareness of social and emotional needs and the feelings students

may have when their disability is spotlighted, the best solution for assistive technology is to choose a technology solution common to general education, where all students can benefit, yet certain features may be turned on to allow the student with a disability increased access to learning content. Not only is this solution viable for supporting SEL, but it also allows districts to utilize more streamlined solutions, keeping in mind that assistive technology is a very specialized solution for students with disabilities. Selecting relevant, resourceful learning solutions and technologies is yet another way to guarantee all students have access to an equitable education.

#### **BRIDGING THE EQUITY GAP**

To create equity while respecting the diversity of our learners and teachers, we must have an understanding of

DIFFERENCES BETWEEN INDIVIDUALS WITH DISABILITIES ACT AND SECTION 504 OF THE REHABILITATION ACT	
SECTION 504 OF THE REHABILITATION ACT OF 1973	IDEA INDIVIDUALS WITH DISABILITIES EDUCATION ACT AMENDED 1997
No parental or guardian consent required.	Parental or guardian consent required.
Must provide impartial hearings for parents who disagree with the identification, evaluation, or placement of the student.	Must provide impartial hearings for parents who disagree with the identification, evaluation, or placement of the student.
Guardians have an opportunity to participate or are able to be represented by counsel; procedures are left to the district or school.	Delineates specific procedures within regulations.
Hearing officer is typically appointed by the school.	Hearing officer is appointed by an impartial appointee.
No "stay put" provision.	Provides a "stay put" provision until all proceedings are resolved.
No requirement of notice prior to any change in placement.	Caregivers must receive a 10-day notification prior to any change in placement.
No parental or guardian consent required. Enforced by the US Department of Education, Office for Civil Rights.	Enforced by the US Department of Education, Office of Special Education Programs.
Adapted from <u>semanticscholar.org</u>	
Section 504 is a civil rights law, and IDEA is an educational benefit law	

each and every student in the classroom. Making sure a learning environment is inclusive for diverse learners is an ongoing struggle for educators because of limited time and resources. However, one strategy suggested in the National Education Technology Plan and proven through research is **UDL**. The UDL framework is for intentionally creating accessible environments for students with various abilities and ways of exploring and learning and, according to **CAST**, "offers a set of concrete suggestions that can be applied to any discipline or domain to ensure that all learners can access and participate in meaningful, challenging learning opportunities." UDL may be implemented by simply teaching the content in such ways as through video presentations, with peers, and by using technologies to enlarge the font size. Educators could also allow students to choose their own activities relevant to their interests and experiences but still assess their level of understanding. Providing accommodations to all learners is surely the most equitable approach to accessibility.

## FOSTERING WELL-BEING AND SOCIAL AND EMOTIONAL SKILLS

Social and emotional learning was first introduced into the education landscape conceptually in the late 1960s by James Comer who hypothesized that "the contract between a child's experiences at home and those in school deeply affects the child's psychosocial development and that this, in turn, shapes the academic achievement." A framework was eventually developed by a research group co-chaired by Roger P. Weissberg, a professor at Yale, for addressing SEL in schools. The framework developed became the foundational principles of SEL in the work of the Collaborative to Advance Social and Emotional Learning as Weissberg and the collaborative moved to the University of Chicago in 1996. Still based in Chicago, its mission is "to establish social and emotional learning as an essential part of education" and is widely adopted by education institutions throughout the world.

A large part of the framework develops five areas of competency: self-awareness, self-management, social awareness, relationship skills and responsible decision-making. These same skills may also be considered soft skills in the industry as they help you form relationships with people by creating trust and dependability. Thus, at the intersection of well-being and academic achievement are these defined social and emotional skills. Because these are so beneficial in building soft skills, they work in concert to afford students the life skills and

capabilities needed to navigate the world.

In 2011, a meta-analysis consisting of 213 school-based SEL programs involving 270,034 K-12 students discovered that SEL had a significant impact on student achievement and, 10 years later in 2021, the Organization for Economic Cooperation and Development conducted a survey of OECD countries to quantify the effect SEL skills have on students' success.

The <u>2021 OECD study</u> looked at peer, family, school, and community influence on social and emotional development that affects life outcomes in the form of overall health and well-being, education, and conduct. The results of the survey found that:

- Regarding academic success and college and career readiness, social and emotional skills are strong predictors, although their future educational expectations are strongly correlated with socioeconomic status.
- Creativity and curiosity were also analyzed, and the findings concluded that the older students were less creative and curious.
- Fifteen-year-olds who considered themselves creative also described themselves as interested in learning new things





and had an association between their social and emotional strengths and their career aspirations.

- Bullying and social interactions in school affected 1 in every 5 10-year-olds with boys feeling more of a sense of belonging to a school than girls, especially 15-year-old girls.
- Students' socioeconomic status affected their sense of fitting in at school and developing relationships with their teachers.
- Students bullied suggested they had less optimism and sociability at school.
- Students who had developed social and emotional skills were also developing as well-rounded citizens.

Each of these significant studies demonstrates the ongoing need for social and emotional learning to be integrated into school learning environments.

### **MENTAL HEALTH FOR ALL**

One in five children are affected by mental health issues, but two-thirds of these children don't have access to mental

health services. Children who cannot access these services and supports are more likely to drop out of school and, in some cases, end up in juvenile or criminal justice systems. Early identification is helpful in reducing the long-term social and emotional effects of mental health disorders with services beginning as early as age 2. A school program often adopted to support mental health for all is schoolwide positive based interventions and supports, in which schools focus on improving school climate and upholding fair disciplinary practices. The pandemic has amplified the need for school and family supports, especially around trauma-informed support that builds resilience. Building a culture that is trauma-sensitive and embraces mental health requires schools to help students feel safe, connected, regulated, and ready to learn.

### ESTABLISHING A SENSE OF WELL-BEING IN ONLINE ENVIRONMENTS

A student's sense of well-being has been shown to improve academic performance. For instance, students who possess hope often adapt to overcome failure by making corrections. Technology is certainly a benefit to improving a student's sense of well-being by supporting peer interactions, allowing them to work self-paced, and providing an opportunity for them to review assignments prior to submitting their work as in the example above. Building

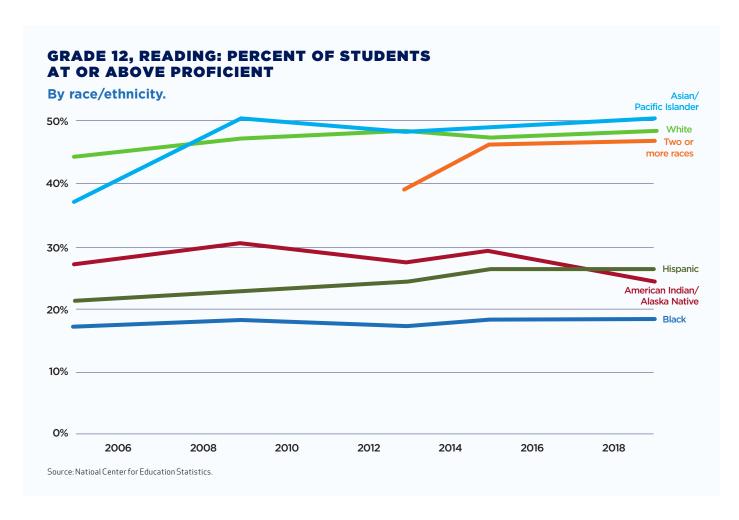
relationships and maintaining them is key to well-being, and many students build relationships with peers through online environments like Minecraft; these developed skills can be easily transferred to in-person interactions. Students also use digital tools to monitor their progress and build self-efficacy through video tools such as Flipgrid. They can participate in cognitive regulation activities by identifying feelings with emojis on online platforms. Supporting wellbeing requires communication, consistency and control. Communicating to the teacher about how they are feeling during a mental health check-in enables the teacher to identify supports that may be helpful; maintaining consistent routines and schedules reduces anxiety, and establishing self-care plans allows students and teachers to distinguish what is required to maintain well-being while in school. Face-to-face environments aren't exclusive to establishing well-being and supporting social and emotional learning. Online environments facilitate each of these requirements by offering a platform for communication, providing a consistent schedule as well as consistent course design, and ensuring students have multiple supports both online

and on-ground. Online environments sometimes provide students with more opportunities to thrive.

### SUPPORTING LITERACY SKILLS DEVELOPMENT FOR EVERY STUDENT

Two-thirds of American schoolchildren are not proficient in math or reading and close to 4 out of every 5 Black and Hispanic eighth-graders are not proficient in these areas. Only 37% of graduating high-school seniors performed at or above grade level in reading and just 17% of Black 12th-graders were considered proficient in reading. The past three years of disrupted learning have only exacerbated the challenges schools face to ensure students are proficient.

Literacy doesn't begin when a child enters school. In fact, prior to entering kindergarten, a child must be able to write, recognize letters and their sounds, count to 20, recognize colors and shapes, know how to hold a book, understand words that go left to right and recognize rhyming words. Couple this with the number of children who may not have support at home to develop these skills and many of our 5- and 6-year-olds are starting behind where they should be





developmentally even before their first day of school.

In fall 2019, there were about 5.12 million English-language-learner students enrolled in public elementary and secondary schools across the US. ELL students have steadily increased in school populations over the past decade and although Title III is a designated federal program for ELLs, there are still many needs that are often unfilled when it comes to supporting learning. Research supports that English proficiency does affect ELL students' risk for reading ability. However, a recent study notes that ELL students with phonological awareness in their native language are predicted to acquire literacy in the second language.

Early intervention and ELL instruction are two keys to developing literacy for all, but inclusive practices can aid in developing literacy skills for every student. Inclusive practices in literacy mean teachers should see that all students have viable ways of being literate and there is value in offering inclusive literacy experiences within a classroom. The climate of the classroom should be accepting of all students by enabling them to have meaningful literacy experiences. This may be a classroom with a rich library available for students, or it may be an intentional lesson design that allows students to select a pathway to learning that is individualized to their interests and background. When this climate is present in a classroom, it can foster empowering education for diverse learners.

Inclusive literacy learning suggests that every student has access to being successful in reading. Meaning all learners – including those with disabilities – are met at their level and have access to various tools that provide success. These supports may include graphic notes or story kits where students can "see" the content in a way that allows them to be successful in comprehending and understanding the meaning of the text. Through strategies accompanied with accommodations such as Immersive Reader, struggling readers can be included in any classroom. The use of this technology tool also aids English-language learners with translation in a home language or hearing a text read at a slower speed. Learning environments that are created to address and support the unique needs of all students ensure equity is possible.

### USING TECHNOLOGY TO MEET STUDENTS ON THEIR READING JOURNEY

A reading journey is unique for every learner. It begins with the language spoken to children at a young age, combined with access to print materials at home and exposure to learning letters and sounds before age 5. Building literacy requires moving a learner from understanding sounds to full comprehension. There are five stages of reading development.

1. The Emergent Pre-reader (Typically age 6 months to 6 years)

- Recognizing print
- Recognizing letters and their sounds
- Understanding words rhyme
- Speaking

### 2. The Novice Reader (Typically ages 6 to 7 years)

- Learning the relationships between letters and sounds within the printed text and spoken words
- Reading stories with high-frequency words and phonically regular words
- Using emerging skills and insights to "sound out" new one-syllable words

#### 3. The Decoding Reader (Typically ages 7 to 9)

- · Reading familiar stories with increased fluency
- Consolidating foundational decoding elements
- Recognizing sight word vocabulary
- Recognizing meaning in the reading of stories or selections that are familiar

### 4. The Fluent Comprehending Reader (Typically ages 9 to 15)

- · Reading to learn new ideas and gain knowledge
- · Reading a variety of text complexity
- Reading from trade books, magazines, reference books

and textbooks

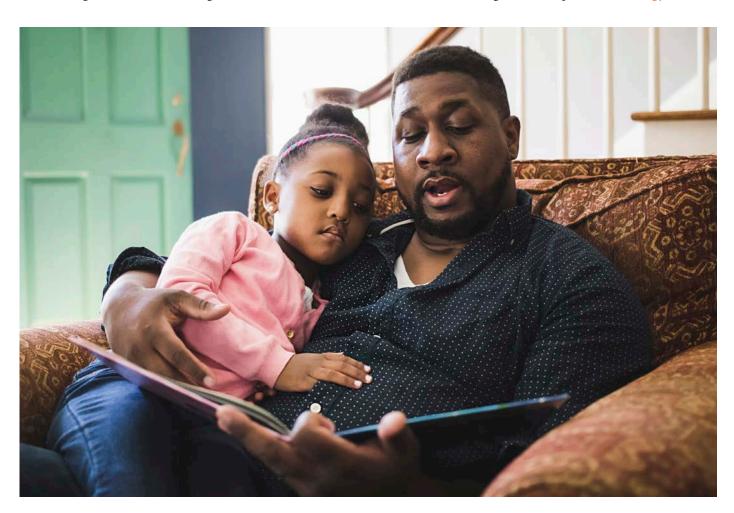
• Developing an enriched vocabulary and syntax

### 5. The Expert Reader (Typically ages 16 and beyond)

- Reading a wide variety of materials
- Reading from various genres
- · Reading for pleasure

Each of the phases builds on the previous and, along the way, learners acquire the five pillars of reading: phonological awareness, phonics, fluency, vocabulary and comprehension. Each step of the journey is dependent on access to materials, resources and ongoing support from an adult. Students who don't have adequate support at home or school become at risk of not meeting essential literacy milestones. Considering that only 37% of high-school seniors are proficient in reading, there is much work to be done to improve the reading journey.

Educators may be able to accelerate the journey for learners by simply adopting the right technologies. The National Center for Improving Literacy promotes education and assistive technology to help provide resources to students for reading skill development. Technology makes it



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possible for teachers to adapt lessons and enhance the language learning process, especially for ELL students. Technology is especially useful in fluency instruction.

A recent study compared students reading print storybooks with students reading with augmented reality and found that the students using augmented reality had improved reading comprehension, had a better understanding of the story structure, and scored better answering implicit questions. Several studies indicate that learning is improved when educators use technology to personalize instruction through a blended-learning methodology. In fact, the use of technology to personalize

<u>instruction</u> was found to prevent reading problems, especially if the implementation was sustained through the third grade.



Assistive technology is defined as "technology that circumvents and compensates for specific difficulties in learning, while education technology provides remediation and practice." Assistive technology might include a wheelchair, crutches, hearing aid, or tablet with optical character recognition. Assistive technology is intended to aid in compensating for a disability. Education technology teaches a skill or is used to aid educators in introducing content. Think of interactive displays, a laptop and instructional software when considering education technology.

The difference is significant because one actually helps the other. Education technology is something we hope to find in almost every classroom. It is intended to be used to expand an educator's capacity to engage all learners in various ways while also increasing the educator's ability to collect data related to skill or content mastery. Assistive technology works alongside education technology and is focused on supporting students' specific needs. Students with assistive technology should absolutely be using education technology as well. In fact, because education technology is used for general education purposes, many students with disabilities may be able to use the functionality of education technology to support their learning without needing additional resources. For instance, a speech-to-text function built into the software and available for all learners is considered education technology, but it also could support a student with low vision.

Assistive technology should be written into the student's IEP or 504 plan and, if written in the IEP, provided by the



school district. Education technology should be funded by the district's operational budget if possible, although some federal funds are available through Title IV. Title I and Title II funds are also eligible to purchase educational technology, but districts must pay attention to supplement not supplant guidance.

When considering literacy instruction, both educational technology and assistive technology should be used responsibly. Developing literacy skills requires listening, speaking, hearing and talking as well as comprehending. Educational technology available to all students should be used to enhance or supplement reading instruction and the assistive technology should align with the student's disability. For example, a student who has an IEP for handwriting doesn't need speech-to-text assistive technology. Acquiring literacy requires practice to develop learners into active readers, so e-readers are most likely not the right education technology for a prekindergarten-to-third-grade classroom where literacy skills are being introduced during the early stage of development. There is no replacement for a highly qualified educator teaching a small group lesson on fluency. For the teacher to have the ability to offer small-group instruction, a blended-learning rotation model incorporating education technology may make that possible. Designing instruction for literacy is one of the most important tasks a school district takes on and responsibly integrating the right technologies can accelerate learning in ways that previously were not possible.

## SECURING AND FUTURE-PROOFING YOUR IT INVESTMENT

Having access to great technology in a classroom is an incredible asset, but it is also a significant investment. Future-proofing that investment requires intentional planning and choosing the right partner in the process. By having increased numbers of devices, hardware and



infrastructure, districts ultimately encounter greater intensity with data security, data privacy and data governance issues that districts are challenged by daily. A district chief information officer must understand the intricacies of K-12 IT such as the Family Educational Rights and Privacy Act (FERPA), Children's Internet Protection Act (CIPA) and Children's Online Privacy Protection Rule (COPPA). Where this legislation is concerned, they must reconcile the distribution and management of devices to all students while considering the critical protection of precious student data. IT directors and district leaders must create an infrastructure that supports the equitable and safe use of technology in schools today and prepares the district's infrastructure and security for the future.

## ALL MEANS ALL DATA, ALL STUDENTS, ALL PROTECTED

Student data is the most valuable commodity on the dark web and district CIOs know it. IT leaders like Rob Dickson of Wichita Public Schools and Sandra Paul from Township of Union Public Schools take extreme caution when overseeing the security of student data in their districts. This

extreme caution is not only due to the type of data the students produce on record, but also the manner in which the systems are accessed today. In past times, data was stored on servers in a physical location that was locked and supervised by district staff. Today, many districts have reduced their server footprint by moving to the cloud through a partner solution. Choosing the right partner can make a difference in the level of confidence IT directors have regarding data protected from a breach.

Student data has been a topic of conversation since early 1970 when the FERPA was passed. The act has only been amended once as a result of the Patriot Act passing in 2001. CIPA was passed in 2000 requiring internet policies and filtering when districts or libraries receive E-rate dollars. COPPA was enacted in 1998, but it took effect in 2000, placing an age limit of 13 regarding the privacy of personally identifiable information when collected online. Each of these pieces of legislation is intended to offer protection by increasing oversight of personally identifiable information, especially for minors.

Minors attending US schools include all students enrolled in the

district in addition to home-schooled students, students in juvenile detention centers, students in special homes, and students in special programs. Although data may be housed in different locations, the district is responsible for



its protection under the aforementioned laws and retains ownership of the data against any third parties. All data literally means every person served or legally connected to the district – either as a student, student caregiver or employee. It can seem quite daunting when considering the responsibilities for securing that type and volume of data.

## FUTURE-PROOFING SECURITY THROUGH AN EQUITY LENS

One doesn't often consider security solutions equitable, but when you consider that student information is generally linked to various learning platforms and data lakes, IT directors must look at all data as if it has the same high-level vulnerability as a student's social security number. Ensuring the data is protected requires additional security measures. Twofactor authentication isn't something that some staffers and students have and others do not. It is a requirement of every user in Wichita Public Schools and most likely other districts around the country. Increasing security sometimes means limiting access to certain functions, such as locking out the ability to access personal emails on school devices and including required filters on all district-issued devices. These strategies offer layers of protection necessary when so many users are off-network.

Thinking of security measures that can add additional layers of protection is a necessary part of every IT director's role today. Cyberattacks are going to happen. Connecting with district IT leaders throughout the region or country makes it possible for leaders to stay on top of the most recent trends and solutions. Connecting to a leadership network can help future-proof your district by listening to and learning from leaders from all backgrounds and all sizes of districts.

#### CONCLUSION

The world of education looks very different today than it did three years ago, yet fundamental elements remain. Literacy, equity, accessibility, and social and emotional well-being are critical to overall student success. Sixty-two percent of K-12 public schools offered in-person instruction at the end of the 2020-21 school year and that number increased to 98% at the start of the 2021-22 year. Within that 98%, many districts continued offering virtual and hybrid options and others are exploring what school weeks and days should look like. Education has hit a tipping point, and leaders across the country and world are imagining where we go next.



Equity is a major part of the conversation. Committing to educating and serving ALL students means ALL students of every background have options that will lead them on a journey to academic success. Literacy is the foundation of all other subject areas and is possibly the most affected by the pandemic. The increased use of technology to provide sustainable instruction also increases the liability districts have to protect valuable and precious student data. Managing the security of data is essential in today's landscape. Leaders must pay attention to what equity looks like in totality and consider how literacy increases access to a wide range of opportunities for our learners. As leaders begin to re-imagine schooling on the other side of the tipping point, equity must be at the center.